

MISSOURI. Conservationist

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Balancing Needs

Missourians love the outdoors. We express this passion in many ways such as hunting, fishing, hiking, birding, farming and gardening for food, maintaining habitat for native species and for

water quality. Nature gives us emotional and economic support. Missouri is blessed with natural abundance, diverse and unique natural communities and a rich outdoor heritage that includes unprecedented public support for conservation. We believe outdoor activities are a part of our cultural heritage and must be sustained for future generations.

Americans have combined a love of the outdoors, owning and working the land, and belief in self-governance that is unique. These beliefs create a powerful motivation to engage in conservation and in public debate about how natural resources are managed. The Department recognizes and welcomes a healthy debate as a sign that people care and that our mission is relevant.

In these changing and challenging times, conservation must not recede in the public's mind as immediate concerns and pressures of daily life consume our leisure time and divert our attention. However, every day I see dedicated Department employees working hard to protect and preserve our natural heritage for equally hard-working Missourians to enjoy and relax from their daily troubles.

Our parents and grandparents were wise to establish a unique conservation system that allows your conservation agency to provide for today's needs while sustaining nature for future Missourians. It is for these future Missourians that we believe conservation must remain relevant. In fact, it is our obligation to do so.

Missourians' interest in nature has always been varied, but public interest in the Department's services and requests for new outdoor activities is growing. We value our traditional partners and hope we can provide new outdoor activities for Missourians as people's interests change. Sometimes, these activities are compatible. Sometimes, the Department must evaluate competing activities and seek alternatives. We try to balance public expectations with science-based conservation practices that sustain natural resources for future generations.

As chair of the Department's Regulations Committee, frequently I must weigh citizens' requests for a certain activity that may be in conflict with the science-based conservation practices. Finding balance is essential. The Department takes this duty and these requests of Missourians very seriously. These are critical examples where the Department bal-

ances the needs of the public today with the future needs of Missourians by managing forest, fish and wildlife resources.

A foundation of the Department's resource policy is the goal of natural community management of lands held in public trust. Aldo Leopold wrote that like a watchmaker, conservationists must preserve the pieces to maintain the watch. The Department has learned much as to how the pieces in Missouri's diverse communities function. Some pieces have been lost. The Department seeks to restore missing pieces of the ecological puzzle whenever practical or feasible to make the watch tick. Restoration of woodlands, glades and prairies are examples where public interest matches a natural resource management need, based on natural community restoration principles. Detailed planning has occurred and policies are in place to minimize potential adverse impacts. The Department believes restoration activities will benefit nature, while providing new sources of outdoor recreation and activities, which in turn will increase economic benefits to Missourians.

Clearly, there is a disagreement in certain public segments about how restoration activities are implemented. The Department responds to public expectations, seeks and obtains informed consent of the people, uses science, public input and public policy to develop restoration protocols to direct implementation practices on the land.

Conservation, like democracy, works best with the informed consent of the people. This does not mean everyone will always agree as we balance the needs of the people and conservation of natural resources. Theodore Roosevelt believed that conservation, at its very root, is the core of the democratic principles of the United States. Natural resources must be conserved so that all the people can enjoy what Thomas Jefferson proclaimed "...life, liberty and the pursuit of happiness..."

Your Department is committed to provide and encourage outdoor opportunities by listening to Missourians, anticipating their needs and assessing their requests while ensuring Missouri's natural resources are conserved for the future.

Thomas A. Draper, deputy director



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WILD FOR U.S.

I am French and my management gave me a position to work in Missouri/Kansas City

in early 2005. During these six previous years, I hunted, I fished, and I trapped in Missouri (and, in the other states, of course). I really enjoyed this experience in the United States of America.

Because I already hunted in many countries (Africa, Australia, Europe and Asia), I want to inform you that the American wildlife management is the BEST in the world. No doubt about this statement. Congratulations for your hard and smart work. Keep going! Again, thank you

very much, I really enjoyed my six years in North America, basically because of your good job.

Frederic Bauchet, Liberty

EARLY TRAPPING

I enjoyed December's *Trapping—Education Over Extinction* feature very much. I am, however, curious about when the beaver pictured on Page 12 was trapped. The picture looks more summer-like rather than from a fall day in November or December. Was it a nuisance-trapped beaver?

John Frederick, Rolla

Art director's note: That picture was taken at a youth trapping clinic in early October. According to the conservation agent in charge of the event, the area manager issued a special use permit that accomplished two goals. One: it allowed for a complete experience for the youth partici-

pating in the clinic, and two: it allowed the area manager to take care of some nuisance animals. The animals used in the skinning portion of the clinic were either nuisance animals trapped in other locations, or donated animals.—Cliff White

GIVING ON ALL FRONTS

Thank you for the article on the Blue Star Memorial at the Shepherd of the Hills Hatchery [November]. It is wonderful to read of the collaboration between several organizations that made it happen.

Upon reading the article I immediately thought of my grandfather A. George Morris. He was working at the Chesapeake Hatchery in Lawrence County when he was drafted for service in the Army during World War II. Inducted just a day before his 38th birthday, he may have been the oldest draftee on record.

I have no doubt the outdoor skills George learned as a child growing up in Dade County helped him survive his time in the South Pacific in the battles at Anguar and Peleliu. In letters he mentions imagining himself on an Ozarks river as he tries to sleep.

George came home at the end of the war, happy to resume his position with the Missouri Department of Conservation, and worked another 20 years. As the superintendent of hatcheries, most of those 20 years he was at the forefront in innovative fish culture and made sure Missourians were provided fish to catch.

The building of the Shepherd of the Hills Hatchery was during his tenure, so as his granddaughter I view the memorial there in a personal way.

Pam Morris Jones, Springfield



Reader Photo

WINTER THAW

Jane Poelzl of St. Louis captured this image of robins visiting her heated birdbath. Or, as she refers to it, her "bird hot tub." "I love photography," said Poelzl, "and will take pictures of almost anything that stands still long enough." She took this photo through her kitchen window that overlooks her yard containing not only the heated birdbath but also four large bird feeders and a post with finch seed, suet and safflower seeds in hanging tube feeders. Other visitors to her yard have included rabbits, squirrels, deer, opossum, voles, red-tailed hawks, northern harrier, woodpeckers, rose-breasted grosbeaks and indigo buntings.

MO ELK DREAMS

I just had to tell you how much I enjoyed and was excited to read the elk story in the current issue [December]. I always look forward to the *Conservationist* but this issue is one of the finest I've ever read. Great history, pictures and information. My wife and I just returned from Yellowstone, where we saw many elk and bison.

Robert Singer, Warrenton



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Kids' Magazine



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Plan for Turkey and Deer Seasons

Have you requested vacation time and started making plans for this year's spring turkey and fall deer hunting seasons? This year's turkey season dates are April 18 through May 8 for the regular season and April 9 and 10 for the youth season. Most of the dates for deer season will be set later this year. However, the opening date for the main event—the November firearms deer season—is Nov. 12. The length and timing of deer-hunting seasons are based on a careful review of the previous year's harvest data, hunter and landowner surveys. The remaining deer season dates should be available by late April. These and other regulations will be incorporated into the *2011 Fall Deer*

and Turkey Hunting Regulations and Information booklet, which should be available around July 1.

Managed Turkey Hunt Applications

Turkey hunters have until Feb. 28 to apply for managed hunts during the 2011 spring turkey season. This year's offerings include managed hunts for archers, youths and people with disabilities. Managed turkey hunts are listed in the *2011 Spring Turkey Hunting Regulations and Information* booklet, which is available at www.mdc.mo.gov/7498. A print version will be available from hunting permit vendors statewide in mid-February. Missouri has some of the

best turkey hunting in the nation, thanks to the cooperation of MDC, citizens and landowners in a 25-year restoration program. Today Missouri's fall turkey population averages between 500,000 and 600,000 birds. To learn more about wild turkeys in Missouri, visit www.mdc.mo.gov/node/4105.

Youth Deer Harvest

Youths posted a strong performance during their two-part deer season, checking the second-largest number of deer in the youth hunt's 10-year history. Great youth hunting opportunities are another example of how conservation makes Missouri a great place to hunt.

Hunters age 6 through 15 checked 1,292 deer during the late youth portion of Missouri's firearms deer season Jan. 1 and 2, bringing the total harvest for the 2010-2011 firearms deer season to 231,513.

The combined early and late youth season harvests totaled 14,555, or 6.2 percent of the firearms deer harvest. Top counties during the late youth hunt were Osage with 27 deer checked, Macon with 26 and Adair with 24.

If you would like to get your youth involved in hunting, a great place to start is a hunter education course. To learn more about hunter education in Missouri or to find a course near you, visit www.mdc.mo.gov/node/3477.



Mountain Lion Killed in Ray County

Missouri recorded its 12th confirmed mountain lion sighting Jan. 3, after a man shot a 115-pound cougar that he believed posed a threat to his safety.

The male mountain lion still had dark stripes on its legs, suggesting it was three years or younger. It measured 6.5 feet from nose to tip of tail. The cat showed no signs of having been a captive animal. Results of DNA testing will provide further information about the animal's origins.

In most cases where biologists have been able to evaluate the age and sex of mountain lions seen in Missouri, they have been young males. This supports the theory that they are arriving here through natural dispersal from states to the west. Northwestern Nebraska is the area nearest Missouri known to have a breeding population of mountain lions.

To date, MDC has found no evidence of a breeding population of mountain lions in Missouri. MDC has never radio collared, micro-

chipped or released mountain lions into the wild and has no plans to do so.

MDC monitors reports of mountain lion sightings and attempts to verify reports that involve physical evidence, such as photos, video, tracks, hair or droppings. If future evidence would ever indicate that mountain lions are establishing a breeding population in Missouri, MDC will develop strategies to address potential problems.

MDC does not allow indiscriminate killing of mountain lions or any other wildlife, but the *Wild-*



ASK THE OMBUDSMAN

Q: How far must a hunter be from the road to fire his or her weapon?

A: There is not a standard distance from the road surface that applies everywhere. The relevant state statute (RSMO 571.030) prohibits shooting "on, along or across a public highway..." The highway includes the road surface and right-of-way associated with the public road. The width of the right-of-way can vary between roads and even along the same road. It is usually clear where the right-of-way ends because there will be a fence, a tree line, a pasture or crop field or some other change in land use that will indicate the end of public road maintenance. Even if the hunter is beyond the right-of-way, care must be taken to avoid shooting across the road or along the right-of-way.

Q: A flock of robins came to an old holly tree in our yard and spent at least five days picking all the berries from the tree. There must have been 50 or more birds. Is this common?

A: It is common for robins to really go after holly berries as you observed. They will ignore the berries for months and then strip the tree of fruit in a short period of time, usually in late winter. Presumably, the taste or consistency of the fruit changes through the freezing and thawing periods of the winter and eventually reaches a condition that is preferred by the birds. The same behavior

occurs with other birds, such as cedar waxwings, and with other trees and shrubs that keep their fruits into late winter.



Robin in an American holly

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at Ombudsman@mdc.mo.gov.

life Code allows people to kill mountain lions without prior permission if they attack or kill livestock or domestic animals or threaten human safety.

Anyone who kills a mountain lion must report the incident to MDC immediately and turn over the intact carcass, including the pelt, within 24 hours. The man complied with these requirements, and conservation agents concluded that no charges were appropriate.

Mountain lions are believed to have been eliminated from Missouri early in the 20th

century. A cougar killed in the Bootheel in 1927 was the last known case until 1994. Further information about mountain lions in Missouri is available at www.mdc.mo.gov/node/3505.

Connect With MDC

The Conservation Department has great ways for you to discover nature and outdoor recreation in Missouri online. Our website, www.mdc.mo.gov, has a wealth of information, but here are a few more suggestions:

- » Facebook—www.facebook.com/MDConline—Join us on Facebook and get the latest conservation news, have your conservation questions answered by our experts and be a part of our state's world-class conservation community with more than 24,000 other fans.
- » Twitter—www.twitter.com/MDC_Online—Join us on Twitter and receive regular short conservation news updates.
- » Flickr—www.MissouriConservation.org/20010—To see more reader photos, please join us on Flickr.
- » YouTube—www.youtube.com/user/moconservation—Watch videos on YouTube to enjoy and learn more about Missouri's outdoors.
- » Blog—www.MissouriConservation.org/node109—Conservation Department staff regularly write about current conservation topics on our Department blog.

Seedling Orders Through April

Missourians who want to buy tree and shrub seedlings for wildlife habitat have until the end of April to place orders with the George O. White State Forest Nursery.

Tree species still available as this issue of the *Conservationist* went to press included shortleaf pine, white pine, Norway spruce, black walnut, native pecan, northern red oak, river birch and pin oak. Shrubs still in stock included flowering dogwood, redbud, wild plum, witch hazel, hazelnut, ninebark, black chokeberry and elderberry. Limited supplies of other trees and shrubs also were available at press time.

Seedling bundles still in stock included the Wetlands Bundle (new this year), Quail Cover Bundle, Conservation Bundle and Wildlife Cover Bundle. The Conservation bundle has six species, four of which (American beech, white fringetree, Ohio buckeye and arrowwood) are only available in this bundle. The Wildlife Cover Bundle has five species, four of which (nannyberry, chinkapin oak, red cedar and chokecherry) are available only if you buy this bundle.

For details, visit www.mdc.mo.gov/7294, or call 563-674-3229 for an order form.



George O. White State Forest Nursery

Elk Trapping Gets Underway

By Candice Davis

Before elk can be brought to Missouri from Kentucky this spring, MDC construction workers had to build an extensive trap, corral and pen system in Kentucky. Despite single-digit temperatures, a 14-inch snowfall, and freezing rain, the construction crew turned the site over to the MDC elk trapping team the first week of the year.

Construction of the corral-type elk trap, holding pens and other facilities began Dec. 8 in Bell County, Ky. According to Construction Superintendent Richard Grishow, who supervised the MDC construction crew at the Kentucky site, the crew completed work on a perimeter fence and holding corral that is capable of holding up to 50 elk at a time. The holding pen was constructed with funds provided by the Rocky Mountain Elk Foundation.

A 16-member construction crew battled harsh winter weather on eastern Kentucky's Cumberland Plateau to build the majority of the system before the Christmas holiday. A four-person team returned after Christmas to complete the construction.

Grishow said frequent sightings of elk kept construction crews excited about their work.

Trapping crews arrived at the site the first week of January and began baiting the trap with a mixture of corn, oats and molasses. Soon after,

MDC construction workers began building the holding pen at Peck Ranch Conservation Area. The Missouri holding pen will consist of a single 12-foot chain-link fence covered with burlap so the elk cannot see out or be disturbed by activities outside the pen.

On Jan. 7, the Kentucky Department of Fish and Wildlife Resources captured the first elk for Missouri's restoration program and placed it in a holding pen near Pineville, Ky. Two herds of elk have been feeding on bait at the trap sites.

Six trapping teams worked weekly shifts in Kentucky until enough elk were detained for transfer. MDC Wildlife Management Biologist Travis Mills supervised the first four-person trapping team to arrive in Kentucky. Mills is the Wildlife Management Biologist for Shannon, Carter, Ripley and Oregon counties.

"To me this is a career highlight," Mills said. "I've spent over 20 years professionally in conservation and I'm excited to play such an integral part of reintroducing elk to Missouri."

The elk will travel to Peck Ranch CA in tractor-trailer trucks after disease testing and a three-month, precautionary quarantine in Kentucky. The MDC team is working closely with the Kentucky Department of Fish and Wildlife Resources elk biologists and state veterinarian throughout the disease testing and quarantine period.

"We couldn't do this project successfully without the assistance of the Kentucky team," Mills said. "They've been through their own elk reintroduction in Kentucky and they're putting their expertise to work helping us to take every precaution to ensure we bring in a healthy elk herd to Missouri."

Once in Missouri, the elk will be housed temporarily in a holding pen at Peck Ranch CA. MDC plans to close the refuge area at Peck Ranch to hunting as long as elk remain in the holding pen. This is not likely to have a significant affect on area users with the exception of a small number of turkey hunters.

MDC personnel have received significant help from the staffs and volunteers from the Kentucky Fish and Wildlife Foundation, the Virginia Department of Game and Inland Fisheries, the Rocky Mountain Elk Foundation and the Appalachian Wildlife Foundation. Virginia plans to conduct its own elk-restoration program with elk from Kentucky and will benefit from helping set up the trapping operation.



The first elk trapped in Kentucky for Missouri's restoration program.

Did You Know?

We help children discover nature through programs in schools.

Conservation Programs in Schools

- » More than **39,000** Missouri children were connected with nature through various Discover Nature Schools instructional units and grants in 2010. Discover Nature Schools helps teachers engage students in hands-on, outdoor, place-based learning.
- » **\$134,724** in Conservation grants supporting Discover Nature Schools were provided in 2010. We provide grants for exploration equipment, outdoor classroom materials and field experiences.
- » **91** schools engage students in learning about Missouri's fish, forest, wildlife or natural habitats through our Conservation K-3 Field Trip Grant.
- » **109** schools teach the elementary habitats unit
- » **104** schools adopted the middle-school aquatic unit
- » This year, we are piloting a high school ecology unit, Nature Unbound.
- » We are developing a kindergarten through second-grade unit.
- » More than **25,000** students have participated in Missouri National Archery in the Schools Program (MoNASP), an international-style target-archery program taught in fourth to 12th-grade physical education classes. The Missouri Department of Conservation is the coordinating agency for NASP in Missouri.
- » For the past two years, Missouri kids have also participated in state, national and world NASP tournaments.
- » More than **600** students participated in the state tournament at Linn State Technical College in 2010.
- » Many schools received reimbursement grants up to \$500 toward NASP-approved archery equipment.
- » To learn more about Discover Nature Schools, visit www.mdc.mo.gov/node/9019. To learn more about MoNASP, visit www.mdc.mo.gov/node/3409.





CONSERVING At-Risk SPECIES

Working to sustain endangered and extirpated
plants and animals in a changing world

by DENNIS FIGG

Until recently, breeding pairs of trumpeter swans, the largest waterfowl in North America, were extirpated from Missouri. They declined from over-harvest and habitat loss. However, swans released by the Iowa Department of Conservation recently built a nest and raised young on private land in north central Missouri. The landowners were justifiably proud of this achievement, building hope that swans may reestablish a nesting population in Missouri. Read more about trumpeter swans on Page 28.



Bald eagles, once extirpated from Missouri, have recovered and are no longer listed as endangered.

People like to hear stories about how rich the land was prior to settlement. We marvel at the great populations of plants and animals that lived in our forests, prairies, rivers and streams. So much of the history of wildlife conservation is the story of abundance.

Flocks of passenger pigeons along the Mississippi River Valley grew so large they filled the sky with a continuous stream of birds for

several days. Wintering prairie-chicken flocks on the high ridges of north Missouri were so numerous they appeared to stand shoulder to shoulder as far as a person could see. Wild turkeys were “too abundant to be worthy of mention.” Photos and news stories from river towns like Hermann documented the “monster catfish” that lived in the Missouri River.

But the stories of abundance are mostly history. The lands and waters witnessed by Lewis and Clark have changed and continue to change.

» **Endangered** is the official status of a species whose prospects for survival within the state are in immediate jeopardy.

» **Extirpated** means the species formerly occurred in Missouri, but is not now known to exist within the state. Extirpated species still occur somewhere in their natural range outside of Missouri.

» **Extinct** means the species no longer lives anywhere. The species has died out.

Passenger pigeons are now gone—extinct. Elk had been eliminated from Missouri by the 1860s—extirpated. Greater prairie-chicken populations in Missouri have dwindled to a few hundred individuals—endangered.

A Changing World

Everyday the world around us is less and less wildlife friendly. Robins and white-tailed deer have proven adaptable and common. Although some species have readily adapted to people and life in a world that is less wild, most plants and animals have not, and are not expected to thrive. Many plants and animals are simply not that adaptable.

The challenge that lies ahead for Missouri citizens and the Department is how, and where, to conserve a representation of fish and wildlife diversity in a dramatically changing world. That is why one of the strategic goals of the Missouri Department of Conservation is “Conserving Plants, Animals and their Habitats.” Plants and animals that are extinct cannot be restored. But it is not too late for many extirpated species—species that are gone from Missouri but still live elsewhere.

“Recovery” for extirpated species is almost never a plan to restore these species to their former range and restore them to former abundance. Restoration for many species is to support small populations in the best places for success, preventing the need for listing them as endangered. Elk, for example, were once found throughout Missouri prior to European settlement. Historical accounts indicate elk were likely extirpated from the state by 1865. In

October 2010 the Conservation Commission approved a plan to bring as many as 150 elk to a defined restoration zone in parts of Shannon, Carter and Reynolds counties.

Sustaining and Restoring Species

Preventing plants and animals from becoming extirpated and restoring some species back to Missouri are both important tasks with broad public support. The recovery of the bald eagle is one of the most successful and well-known stories. Bald eagles declined because of indiscriminate killing and environmental issues. While they remained common in Alaska, nesting populations were extirpated from much of the lower 48 states, including Missouri. Environmental regulation in the 1960s that improved water quality and removed dangerous chemicals from the environment, as well as law enforcement directed at people who killed eagles illegally, were both part of the solution. Restoration by Department staff, with support from the public, recovered this bird in Missouri. Eagles were nesting again in the 1980s and by the 1990s recovery was evident in Missouri. Today there are more than 150 active eagle nests in Missouri alone, and thousands of nests in the Midwest.

Not every species will recover as dramatically, and public support will often not be as high as for bald eagles. But Missourians are preventing other species from becoming extir-

Turkeys were once nearly gone from Missouri, but now are so numerous as to support a generous hunting season.



This tallgrass prairie orchid is nearly extirpated from the state, but the small remaining populations are protected by public agencies and by interested conservation landowners.



Western prairie-fringed orchid

NOPADOL PAOTIONG

Topeka shiners inhabit the quiet pools of upland creeks, mostly in the northern Missouri prairie region. Increased siltation, mostly as a result of intensive cultivation, has affected prairie streams. The Topeka shiner is not yet extirpated, and there are recovery efforts in place to prevent them from declining further.



Topeka shiners

JIM RATHER



Elk

NOPADOL PAOTIONG

Elk were once found throughout Missouri and were likely extirpated from the state by 1865. The Conservation Commission approved a plan to bring as many as 150 elk to a restoration zone in Shannon, Carter and Reynolds counties.

pated, mostly through habitat restoration and directed management at specific places. One example is the prairie fringed orchid. There is little information about the abundance of this native orchid on the historic landscape, but a high percentage of the few tiny remaining prairie remnants in north Missouri still support a few plants. These scattered occurrences suggest that prairie fringed orchids were quite common across the tallgrass prairie landscape. The same changes on the land that contributed to the decline of prairie-chickens also affected plants, such as prairie fringed orchids, and fish, such as Topeka shiners.

Restoration of native species and their habitats remains an important task for fish and wildlife agencies, but the conservation objective may not be to return these species to former abundance, but to support them in smaller numbers in a few locations. Grasslands have changed. It seems unlikely that greater prairie-chickens or prairie fringed orchids will be restored to former abundance throughout their range, but it may be possible to keep small populations in priority places. Prairie streams have changed, but with our help Topeka shiners should persist in some of the remaining high-quality streams in north Missouri.

Our Management Mission

The Department of Conservation emerged during an era of land abuse and declining fish

CONSERVING PLANTS, ANIMALS AND THEIR HABITATS

Goal: The Conservation Department will work to increase the number of high-quality Missouri natural communities, including wetlands, prairies, forests, woodlands, cliffs, streams, grasslands, savannas, glades and caves.

What Missourians Tell Us

More than three-quarters of Missourians agree that “The Missouri Department of Conservation should make an effort to restore animals that once lived here or are currently very rare in Missouri” (79 percent) and that the Department “should conserve and restore rare and endangered plants” (79 percent).



and wildlife populations. Concerned citizens demanded a recovery of lands and waters that would again produce abundant fish and wildlife populations. Much of the land has indeed recovered, but that does not mean that all of the moving parts have returned, or returned in numbers that are sustainable. Not every plant and animal has a place to live and most lands and waters no longer have native species in abundance.

It is not accurate to say there is no place for native plants and animals on the modern landscape, but it is accurate to point out that the challenge to conserve wildlife diversity is huge. The conservation goal may not be to return them to their former glory, but to keep healthy populations in the best possible places. Fish and wildlife agencies of the future have to balance the ecological needs of fish and wildlife with the human-managed landscape and the concerns of people. Former abundance is not assurance of future abundance.

Habitat conservation is the best way to prevent species from declining so far that they become endangered and perhaps extirpated from Missouri. Habitat conservation does not ensure that every species will be abundant in the future, but it does provide a home for the diversity of life in Missouri. In turn, this diversity ensures healthier and more resilient habitats in a dynamically changing world. ▲

Aimee Wiese uses a cut out of a male prairie-chicken to attract prairie-chicken hens to the lek (an area where males gather to perform their courtship displays) at Wah' Kon-Tah Prairie near El Dorado Springs during the reintroduction of new birds in Missouri.



Prescribed Fire: A Management Tool

Using fire to revitalize plant and animal communities,
protect our resources and benefit livestock.

by BILL ALTMAN and PAUL HAGEY

Fire crews work on a prescribed
burn at Union Ridge Conservation
Area near Kirksville.

The Conservation Department fights wildfires and conducts prescribed fires. So do the Forest Service, National Park Service, U.S. Fish & Wildlife Service, U.S. Army Corps of Engineers and Missouri State Parks. These agencies together might burn more than 100,000 acres each year using prescribed fire if the weather and conditions are suitable.

There is an important distinction between wildfire and prescribed fire: Prescribed fire is carefully planned and controlled. A “burn plan” is essential in using fire as a management tool.

A burn plan includes a statement of the burn’s objectives—what results are intended by burning. The plan also sets requirements for weather conditions before and during the burn, and includes considerations for smoke dispersal and contingency plans in case the fire escapes the designated area. Trained personnel and equipment must be available to conduct the burn safely and then evaluate the area to see that the fire met its objectives.

The intensity of prescribed burns is noticeably less than wildfires, but the response to prescribed fire by vegetation and animal life is often dramatic. Many plant and animal species that were long absent repopulate the area within and near the burn area.

Landscape burns at Peck Ranch CA have helped provide good nesting and foraging habitat for a variety of wildlife.

For more than 30 years, the Conservation Department has used fire as a vegetation management tool. In the early years of prescribed fire, the areas burned were generally small, and there was no consensus among resource managers on the net benefit of managed fire. Indiscriminate burning on private land was more prevalent, and



Bobwhite quail

a concern, as it was being overused in many areas and often got out of control—leading to wildfires.

Through decades of fire prevention education by Smokey Bear and the Department, and the help of many citizen partners, we have been able to greatly diminish destruction due to wildfires. In the meantime, the value of planned, prescribed fires has been acknowledged by all resource managers. Also, an understanding of the role of naturally occurring fire in the environment and the important function it has in sustaining ecosystem health has grown. This has led, in some cases where the conditions are appropriate, to large landscape-sized prescribed fires.

Benefits of Landscape-Sized Burns

In 1994, Peck Ranch Conservation Area was one of the first sites for landscape-sized (ap-



DAVID STONNER

MDC has used prescribed fire as a vegetation management tool for more than 30 years.

proximately 1,000 acres or more) prescribed burns on the state's diverse Ozark terrain of forest, hills, valleys and glades. A prescribed fire of this size mimics the area's historic fire pattern and reestablishes the habitats those fires created and maintained.

Fire behavior, on a landscape scale, varies across the land with the amount and type of fuel loads like leaf litter, grass, and woody logging debris, and terrain properties like slope and aspect. Some sections burn more intensely, some less, and some not at all. The result is a mosaic of burned landscape that ensures a variety of habitats. "The more diversity I have in a

Prescribed Fire Can Help You Manage Your Property

1. Produce more forage for cattle in native warm-season grass plantings and prairies.
2. Increase vigor and diversity of plant and animal life in prairies.
3. Control woody plants and exotic grasses in grasslands and idled fields. Fire can be effective in reducing cedar and other tree species from native idled land. It also retards exotic grasses and encourages the annual weeds that provide food for wildlife.
4. Restore vigor and plant diversity to glades, woodlands and savannas. Fire can rejuvenate cedar-invaded glades and savannas that have lost their grassy understory. Extreme caution is required to see that the glade or savanna burn doesn't become a wildfire in the woods.
5. Fire may help in woodland and forest management. It may be useful to not only control competing woody plants, but to also stimulate the regeneration of oaks.
6. Periodic prescribed fire, done carefully, may increase the biological diversity within a woodland.
7. Help restore historical pine woodlands. Fire is useful in promoting pine regeneration and maintaining a native grass and forb community associated with pine. We are currently studying how fire also helps control woody species that compete with pine.

Partnering With More Than 800 Fire Departments to Protect Missouri From Wildfire

Missouri's rural fire departments have worked cooperatively with the Conservation Department to protect life, property and natural resources from wildfire for many decades. In the early days of this partnership, fire departments came to back up the Conservation Department's wildfire suppression resources on fires that were difficult to control.

Over the past 30 years, the Department has helped organize, equip and train fire departments to assist with wildfire suppression. Over time, the roles of the partners have changed. Today, fire departments do a majority of the initial attack of wildfires. In most of the state, the Department serves as the backup when difficult fires occur. This backup is often in the form of sending a bulldozer to build fuel breaks in order to catch a fast-moving fire.

Through Mutual Aid Agreements, the Department provides Volunteer Fire Assistance matching grants and federal excess property to help fire departments equip themselves. The Department also provides varying levels of training in wildfire suppression. The level of the training provided depends on the training need determined by the fire department.

burn, the more habitat diversity I have within a landscape," says Ryan Houf, Peck Ranch's area manager and current burn boss.

At Peck Ranch, landscape burns helped wild turkey populations and other wildlife by thinning forest understory and maintaining the region's characteristic interspersed glades and woodlands. These burns have also been instrumental in the successful restoration of the eastern collared lizard to the area, an indication of just how powerful prescribed burns can be as a tool in habitat restoration.

Collared lizards evolved as, and still are primarily, a Southwest species. However, about 8,000 years ago, during the warm-temperature peak in the interval since the last North American glacier advance, known as the Xerothermic maximum, southwestern species including collared lizards, tarantulas and prickly pear cacti moved east into the Ozarks. As the area cooled off, these species remained in the warm pockets of the Ozarks: south- and southwest-facing glades, typified by rocky outcrops and thin soil on sunny slopes. Because of their unique, distinct ecology, these glades have become islands of diversity within the matrix of Ozark woodlands, but remain integrally tied to periodic fire for their existence.

With a lack of fire, glades begin to degrade in about 30 years; the first stage usually involves their encroachment by sun-loving, thin-soil- and drought- tolerant vegetation like the notorious eastern red cedar. Landscape burns at Peck Ranch have helped maintain open glades among grassy, open woodlands, and increased ground vegetation and insects, which has helped provide good nesting and foraging habitat for a variety of wildlife. For example, fire-stimulated grasses and forbs at once provide foraging cover for turkey and quail poults and also an abundance of ground-level insects, which are critical components of a poult's diet in the first few weeks of its life.

Natural Resource and Property Protection

The Conservation Department, along with the U.S. Forest Service and many rural fire departments, has nearly accomplished the job Frederick Dunlap, our first state forester, once declared impossible: curtailing the destruction of fires past.



DAVID STONNER

Fire crews use an anemometer to determine the direction and speed of wind on a prescribed burn at Union Ridge CA near Kirksville.



DAVID STONNER

Partridge pea, an important food source for wildlife, along with other wild forbs and legumes, can flourish with prescribed fire.

Each year wildfires still burn about 44,000 acres in the state, however that is down from the early years of fire control in the state when wildfires burned about 68,000 acres annually.

As in all parts of the U.S., wildfires in Missouri sometimes destroy dwellings, outbuildings and equipment. As a result, educational programs have been developed to coach homeowners on how to protect their property. One of these is an interagency effort called Firewise. Protection of property is possible with a little initial work, which primarily involves the trimming and removal of both live and dead vegetation near the home and other buildings. This cleanup work is performed in the home ignition zone, an area of about 30–50 feet around a structure. Then, with some periodic maintenance to sustain this cleared space, property improvements are protected from almost all instances of wildfire in Missouri. For more information on protecting your home from wildfire, visit the Firewise website at www.firewise.org or talk with your local Department forestry office.

In addition to the loss of developed property and equipment from wildfire, we can lose the value of commercial-grade timber through scarring and subsequent disease of trees. We can also lose soil cover and items such as fence posts and hay bales. We spend large amounts of tax money training and equipping our firefighters to get in harm's way and suppress these fires.

Missouri's wildfire problem is unlike that in the western U.S., where wildfire is usually

a result of dry lightning storms. Wildfires in Missouri are nearly all human caused and, therefore, preventable. Most are caused by burning debris, household trash and yard waste and farm clean-up fires. A few are due to carelessness with equipment or campfires, and some are from ill-planned burns by landowners. We still experience a significant number of wildfires that are the result of arson. In some parts of the state, arson accounts for more than half of the acres burned. Arson sets and escaped fires generally have one thing in common: they occur when the weather is dry, fuel is dry and winds are high. The result is wildfires with a maximum destructive potential. This potential is what many people have come to expect from any and all fires they see.

As we have learned more about the natural processes of the resources we manage, we have found that not all fires are bad. Research and experience have shown that fire can be used to manage native grasslands such as prairies, glades, savannas and woodlands, or planted cool- and warm-season grasses. Fire can control woody plants and herbaceous weeds, restore natural communities,

Smokey Bear

Smokey Bear, the fire-fighting symbol of fire prevention since the 1940s, is still around. Smokey has been one of the most successful advertising campaigns in the nation's history. His messages on fire prevention to schoolchildren have resulted in a generation of people who are aware of the dangers and damages of wildfires.

Now that we know some fires can do good things for the environment, Smokey is changing his message to "Only You Can Prevent Wildfires." His message of responsibility with fire in the woods is just as valid today as it was in 1944. Here in Missouri, with all of the houses being built in our beautiful forestlands, it is crucial that we let no fires, wild or prescribed, cause damage. This can be accomplished by preventing wildfires but also by having our homes prepared for wildfires when they occur. Preparing homes to be wildfire safe is one of the key goals of the Firewise program. Visit the Firewise website at www.firewise.org for more information on making your home safe from wildfire.

Smokey's Prescribed Fire Checklist—Don't Burn If:

- ⊗ You don't have a written burn plan.
- ⊗ You can't stay with the fire until it is safe.
- ⊗ You don't have the needed equipment or people.
- ⊗ Your firelines aren't in place and functional.
- ⊗ You don't have the right weather or it is expected to change during the burn.
- ⊗ You haven't contacted neighbors, the Conservation Department or your county 911 fire dispatch center.

stimulate desirable plants, change grazing pressure, reduce wildfire hazards, improve wildlife habitat and increase livestock gains. To realize these benefits, fire must be used under specified conditions and with proper timing.

If You Use Prescribed Fire, Do It Right

Private landowners have been using fire for decades. Ranchers in north and south-west Missouri have been working with the Conservation Department and Natural Resources Conservation Service (NRCS) for many years to manage their prairie grasses with prescribed fire. Many other landowners and some non-landowners have been burning land without benefit of a plan. Sometimes they get the desired results, but sometimes their fires burn too fiercely or escape onto adjoining lands and cause more damage than good.

The Conservation Department continually works with landowners to train them on the safe and effective use of prescribed fire. Landowner prescribed fire workshops are conducted periodically in all parts of the state. These workshops provide the landowner with some basic knowledge in conducting a prescribed burn. Occasionally, they are followed up with a demonstration burn.

Our offices have current weather information and are able to advise you if burning conditions are expected to make your prescribed fire hard



to contain. In addition, there are now some very good weather websites, such as those administered by the National Oceanic and Atmospheric Administration (NOAA). The NOAA website contains a twice-daily Fire Weather Forecast during the spring and fall burn season.

Take advantage of both the training and weather availability if you are thinking of doing any prescribed burning.

The physical demand on fire crew members during wildfires, as compared to prescribed fires, is very different. In a wildfire situation, heat and smoke are intense and decisions must be made instantly. In a prescribed fire situation, prior planning and preparation makes it unnecessary for firefighters to endure the heat and smoke. Train, plan and equip for your prescribed fire prior to lighting so that using this management tool does not turn into a wildfire that can risk life and property. Many county soil and water districts and some conservation organizations rent for a small fee prescribed burn equipment such as drip torches, leaf rakes and water tanks.

These days, there are a few prescribed fire contractors across the state who can be hired to help do a prescribed burn. These contractors have a narrow window in which to provide their

Rural Forest Fire Equipment Center

Missouri's participation in the Federal Excess Personal Property (FEPP) program has been extensive. The Department's Forestry Division began acquiring federal excess equipment in the early 1960s. The availability of excess property helped Forestry Division staff across the state work with hundreds of communities to establish a network of mostly volunteer-based fire departments. Today, with the help of the FEPP, many of those same small fire departments have grown to a size and to a quality that is unbelievable.

The Rural Forest Fire Equipment Center (RFFEC) opened in Lebanon in 1991. The RFFEC, under the leadership of the excess property coordinator, operates with a dedicated staff to manage the FEPP. Numerous local Forestry Division staff work one-on-one with fire departments to help administer the FEPP as well. Throughout the life of FEPP, the benefits to Missouri's rural fire service, to forest resource protection, to communities in need of fire protection and to the Missouri Department of Conservation have been enormous.

—by Ruby Anderson



DAVID STONNER

services and should be contacted well in advance of the planned burn. If you feel it is not within your ability to conduct the burn with a high degree of certainty, securing the services of a prescribed burn contractor is a very good option. The Conservation Department offices maintain a list of prescribed fire contractors, or you can visit our website at www.MissouriConservation.org and search for “conservation contractors.”

Using Prescribed Fire

If you have decided that prescribed fire is a good management tool for your land, and you are willing to take the care and time needed to do it right, you have one more question to answer: “Am I going to use prescribed fire periodically, and continue to do it right?”

Prescribed burning, just as grazing, haying or chemical application, is a management practice that must be repeated for maximum effectiveness. Forage production will only benefit for a few years following a burn.

Plant diversity and vigor will only be stimulated for a few years with one burn. Plant diversity will probably continue to change over time in a managed natural community, but only if periodic prescribed burns are continued. The

frequency of burns will vary by plant community from once every few years to once in 10-20 years, but repeat burns will be necessary to maintain the benefits of using prescribed fire.

If you plan to use prescribed fire:

- Contact the Conservation Department for information and training.
- Prepare a burn plan.
- Stick to your burn plan—call it off if anything isn’t right.
- Get the most current Fire Weather Forecast information from NOAA or your nearest Conservation Department office.
- On burn day, let your neighbors, the local Conservation Department office and county 911 fire dispatch know when you plan to ignite the prescribed burn.
- Consider securing the services of a prescribed fire contractor.
- Be committed to using prescribed fire periodically.

Prescribed fire is a highly effective management tool, but it takes time, thought and commitment to ensure that you burn only what you want. If you aren’t going to achieve what you want, don’t burn it, and if you can’t contain it, don’t light it. ▲

A trail bordering a test plot at Charlie Heath Memorial CA helps to show the difference between regularly burned, under-control brush on one side and its unburned, brushy counterpart on the other.

Regulations 2011 Update

New regulations focus on creating convenient, quality outdoor experiences.

MISSOURIANS CARE DEEPLY about our state's forests, fish and wildlife. To ensure these resources are protected, the Conservation Department's regulations committee reviews the *Wildlife Code of Missouri* each year. In doing so, the committee considers hundreds of letters, e-mails and phone calls from hunters, anglers and other outdoor enthusiasts who have suggestions about resource management and regulations. Although every suggestion cannot be adopted, all are carefully reviewed. Following is a summary of key changes to the *Wildlife Code*. Most will go into effect March 1, 2011, unless noted. Each is a reflection of the Department's commitment to work with you and for you to sustain healthy plant and animal communities, increase opportunities for Missourians to experience nature, and promote public safety.

The hunting season for ruffed grouse has been closed in order to preserve their numbers. Grouse populations have dropped to the point that they risk disappearing from Missouri.





JIM RATHER

Many regulations are designed to sustain healthy plant and animal communities. Some rules involve harvest regulations; others are set to curtail the spread of invasive plants and animals that threaten Missouri's native species.

- Thanks to restoration efforts by the Conservation Department in the 1960s, ruffed grouse were once locally common in areas that had been logged and subsequently overgrown with brush. As these brushy patches matured into forests, grouse populations began to decline. Today, grouse populations have dropped to the point that they risk disappearing from the Show-Me State. Biologists are working to reverse this trend. In the meantime, the hunting season for ruffed grouse has been closed.

- Although the upstream and downstream boundaries for the Black Bass Special Management Area on the James River were not changed, the *Wildlife Code* was updated to reflect current road names. The *Wildlife Code* now reads that the management area stretches from the Hooten Town Bridge (The Loop Road at Route O) to the Highway 413/Highway 265 bridge at Galena. The purpose of the management area is to increase the numbers and sizes of smallmouth bass in that stretch of river.

The *Wildlife Code* was updated to reflect current road names for the Black Bass Special Management Area on the James River.



- Commercial anglers who harvest roe-bearing fish should be aware of several changes. First, to protect endangered pallid sturgeon, the United States Fish and Wildlife Service has ruled that similar-looking shovelnose sturgeon may only be harvested in the commercial waters of the Mississippi River above Melvin Price Locks and Dam (Replaced Locks and Dam 26). Second, for several years, commercial anglers have been required to have a Resident Roe Fish Commercial Harvest Permit in addition to a Commercial Fishing Permit to catch and keep bowfin and paddlefish on the Mississippi River. Now, the *Wildlife Code* has been clarified to indicate that those permits are required to take, possess and sell roe from these fish. Last, to curtail the illegal sale of caviar, the *Wildlife Code* was rewritten.



JIM RATHER



CLIFF WHITE

ten to clarify that fish eggs may be sold only at retail by resident commercial establishments.

- Researchers who band birds for scientific study must now obtain both a federal bird banding permit and a Missouri Wildlife Collector's Permit.

• Several changes have been made to Missouri's falconry regulations to align them with federal guidelines. A complete listing of the changes is available upon request from the Conservation Department. They also can be found online in Chapter 9 of the *Wildlife Code* at www.sos.mo.gov/adrules/csr/current/3csr/3csr.asp.

In order to protect endangered pallid sturgeon, the similar-looking shovelnose sturgeon may only be harvested in commercial waters of the Mississippi River.



NOPPADOL PAOTHONG

- Marbled crayfish have been added to the list of species that are prohibited from being imported, transported, sold, purchased or possessed in Missouri. These non-native crustaceans reproduce rapidly, become established quickly and can survive out of water long enough to travel overland. There is evidence they endanger not only native crayfish but also fish and other aquatic organisms.

Missouri is a world-class place to hunt, trap, fish and experience nature. The following regulation changes increase opportunities for Missourians to engage in these activities.

The new e-Permit System will allow permits to be purchased online and printed at home. However, deer and turkey permits will no longer include a removable transportation tag—the permit itself will be the tag.

- Online permit buying has been available in Missouri since 2002, but buyers had to wait up to two weeks for their actual permits to arrive by mail. Beginning March 1, the new e-Permits System will enable sport hunters, trappers and anglers to buy their permits online, print them out at home and use them immediately. Folks will still be able to buy permits from traditional vendors and by using the telephone if they prefer.

- Deer and turkey permits will no longer include a removable transportation tag. Instead, the permit itself will be the transportation tag. Each permit will have months printed along one edge and dates along another. Hunters will notch the month and day that they shot their



On July 1 the Resident Fur Handlers Permit will be rescinded, which will allow those with valid permits to possess, transport and sell furs throughout the year

game, then attach the permit to the animal. The animal still must be reported to Telecheck as before. An easy way to remember the new procedure is: Bag it, notch it, tag it, check it.

- At the request of anglers, the Conservation Department will allow the use of underwater lights for bow fishing on lakes, ponds and other impoundments. Underwater lights will improve the ability of bow fishers to identify their targets. The lights will also provide more opportunity for anglers. This is because unlike traditional above-water lights that must be mounted to a boat, underwater lights are available as portable drop cords that can be used with a variety of water craft.

- Hunters who enjoy pursuing game using primitive methods will have additional opportunities. Atlatls may now be used to take bullfrogs and green frogs with a hunting permit. They also may be used to take deer during the firearms deer season except for the muzzleloader



How Regulations Are Set

Each year, the Conservation Department's Regulations Committee reviews the *Wildlife Code* to ensure Missouri's forests, fish and wildlife are protected. Here's how the process works.

1. Changes proposed by the public and staff are brought to the committee to review.
2. The committee researches the effects of the proposed regulation changes. Information reviewed may include costs to taxpayers, effects on wildlife populations, user group surveys, public comments and feasibility studies.
3. When research shows a change would improve management of a natural resource or provide more opportunities for Missourians to enjoy nature, a proposed regulation change is sent to the Conservation Department's director.
4. If the director approves the change, the proposal is submitted to the Conservation Commission, four citizens appointed by the governor.
5. If passed by the Commission, the proposed changes are filed with the secretary of state and published in the *Missouri Register*. A link to the *Register* can be found at www.mdc.mo.gov/node/4871.
6. The filing begins a 30-day public comment period. If no comments are received, the final regulation is filed and becomes effective either 30 days after publication in the *Missouri Code of State Regulations* or on the date specified in the proposal.
7. When comments are received, the proposal is reviewed. Based on the public's comments, the Commission may decide to drop, modify or implement the regulation.

portion. An atlatl is a rod or board-like device used to launch, through a throwing motion of the hand, a dart 5 to 8 feet in length.

• To allow trappers and hunters more opportunities to sell their furs at national and international auctions, the Resident Fur Handlers Permit will be rescinded July 1, 2011. On and after this date, hunters and trappers with valid permits that allow the taking of furbearers may possess, transport and sell furs throughout the year.

• Trappers who use cable restraint devices should be aware of two changes. Cable restraints can now be used for the duration of the furbearer trapping season, which runs from Nov. 15 to Jan. 31. In addition, the *Wildlife Code* was rewritten to clarify that only coyotes, red foxes and gray foxes may be taken alive with cable restraints from Feb. 1 through the last day of February.

Some regulations are developed to foster public safety or the personal safety of individual hunters, trappers and anglers.

• To protect the personal information of sportsmen and women, the Conservation Department now allows the collars of hunting dogs and most hunting, fishing and trapping equipment to be labeled with the owner's name and address, or Conservation Number. Conservation Numbers, which can be found on all permits, do not reveal personal information, but they give conservation agents what is needed to identify who owns the dog or equipment.

• The Conservation Department has more than 1,000 conservation areas in the state. To keep plant and animal communities healthy and provide quality hunting, fishing and other outdoor experiences, area managers sometimes request regulation changes. You can see all the regulations for a specific conservation area by searching the online Conservation Atlas at www.MissouriConservation.org/2930. ▲



Beginning March 1, regulations will allow the collars of hunting dogs and most hunting, fishing and trapping equipment to be labeled with the owner's Conservation Number in order to protect personal information.

Trumpeter Swan

With the cold winter winds comes this large graceful waterfowl to Missouri rivers, lakes and marshes.

EVERY FALL, AS cold winds push waterfowl southward along the Mississippi Flyway, my thoughts turn toward trumpeter swans. I'm fortunate to live within an hour of a popular overwintering area for these gentle giants, Riverlands Migratory Bird Sanctuary, known to locals as Riverlands. Riverlands, which flanks the Mississippi River near its confluence with the Missouri River in St. Charles County, is managed by the U.S. Army Corps of Engineers. Each winter, trumpeter swans are drawn to Riverlands by its flooded prairies, ponds, and a huge backwater known as Ellis Bay. As many as 500 trumpeters return to Riverlands each winter and they provide a unique experience for birdwatchers, photographers and nature lovers due to their enormous size and resonant call which indeed sounds like a trumpet.

Although trumpeter swans (*Cygnus buccinator*) now number close to 16,000 individuals, they were near extinction in the 1920s. In the 1800s and earlier they were hunted indiscriminately, not only for their meat but for their feathers, which made premium quill pens. Eventually protection, research, management and education by state and federal agencies and private organizations, such as The Trumpeter Swan Society, led to recovery of the species. Now more people than ever have the opportunity to observe trumpeters in the wild. Trumpeter swans are completely white with a black bill, except for juveniles (cygnets), which are a beautiful gray color. Male trumpeters have a wingspan of 8 feet and can weigh almost 40 pounds! Although trumpeters can be found with other swan species, you will be confident about your sighting as soon as you hear their trumpet call.

Trumpeter swans usually mate for life and nest in the same wetlands each year in northern states such as Minnesota and Wisconsin and farther into Canada and Alaska. After the eggs hatch and the young are raised, many trumpeters head south for wintering areas, such as Riverlands, where their number usually peaks in January. During their stay in Missouri, trumpeters not only feed on aquatic vegetation in ponds and wetlands, but also on crop residue in farm fields, especially corn. By mid-March, most trumpeters begin their trek back north to breeding areas.

This year was special for me as Charlie Deutsch, the environmental manager at Riverlands, asked me if I would photograph the area's trumpeter swans under a special use permit. I accepted the offer and began weekend visits to the area, focusing on one of the flooded ponds where the angelic birds concentrate each fall. I used my camouflage kayak as a platform for my photography so I could be moderately close to the swans without disturbing them. The kayak also placed me at a low point of view which made the images appear more natural. During the assignment I was successful in obtaining some vivid photographs, especially during the magic light of sunrise each morning. Hopefully, these images will encourage others to visit the Riverlands to pay their respect to our nation's largest waterfowl.

—story and photo by Danny Brown

To learn more about trumpeter swans, including listening to an audio recording or watching a video of a trumpeter swans, visit www.mdc.mo.gov/node/3851.





Buford Mountain State Forest

Discover challenging hiking, scenic views and good hunting at this rugged, little-known gem.



HEARTY WINTER VISITORS will find many attractions at Buford Mountain State Forest in Iron and Washington counties. Remnants of the area's early timber industry will intrigue history buffs, and more than 10 miles of trails, including an interior loop, will challenge hikers. In addition, the area's excellent forested habitat and good game populations will tempt—and may reward—skilled hunters.

Located east of beautiful Belleview Valley, this 3,824-acre area was purchased by the Missouri Department of Conservation from the Nature Conservancy in 1979. It was named for settler William Buford, who acquired the land through a Spanish Land Grant in 1812. In the mid-to-late 1800s, the charcoal industry flourished in the Belleview-Arcadia Valley, and evidence of this industry endures in the form of charcoal kilns scattered over the entire mountain.

With most of the mountain hardened by granite known as rhyolite, the area yields little permanent water. Limestone streambeds mark the base of the mountain, and several wet-weather springs can be found over the area. The mountain's highest peak is 1,740 feet above sea level, and experienced hikers will appreciate the mile-long climb to the top. Along the way, you'll notice the area's most outstanding feature—its glades, which are a type of rocky, desert-like natural community. They range in size from less than 1 acre to more than 10 acres. Please respect their sensitive plant and animal communities and very thin soils, and tread lightly through them. Take a breather at spectacular Bald Knob and enjoy the 10-mile view of Belleview Valley below.

Buford Mountain is home to wildlife species common to Missouri, including deer, squirrel and turkey, and is a favored hunting area for turkey hunters. Several species of forest birds also live here year-round. Don't be surprised if you see or hear the dramatic pileated woodpecker hammering or "cackling" in the forest.

Campers will find primitive camping spots next to both parking lots, but there are no amenities, such as potable water or sanitary toilets. Come prepared to pack out trash and waste.

You will find Buford Mountain State Forest eight miles north of Ironton on Highway 21, then two miles north on Route U. As always, check the area's website (listed below) for regulations, brochure, map and special notices before you travel.

—Bonnie Chasteen, photo by David Stonner

Recreation opportunities: Birding, camping, hiking and hunting for deer, squirrel and turkey

Unique features: This is a predominantly forested area with primitive camping, a 10-acre rhyolite (volcanic rock) glade and a 10.5-mile hiking trail.

For More Information

Call 573-223-4525, or visit www.MissouriConservation.org/a7727.





Hunting and Fishing Calendar

FISHING

OPEN

CLOSE

Black Bass (certain Ozark streams, see the *Wildlife Code*)

5/22/10

2/28/11

impoundments and other streams year-round

Paddlefish

3/15/11

4/30/11

HUNTING

OPEN

CLOSE

Coyotes

5/10/10

3/31/11

Crow

11/01/10

3/03/11

Deer

Firearms: November

11/12/11

TBA

Rabbits

10/01/10

2/15/11

Squirrels

5/22/10

2/15/11

Turkey

Youth

4/9/11

4/10/11

Spring

4/18/11

5/8/11

Waterfowl

please see the *Waterfowl Hunting Digest* or see www.MissouriConservation.org/7573

TRAPPING

OPEN

CLOSE

Beavers and Nutria

11/15/10

3/31/11

Otters and Muskrats

11/15/10

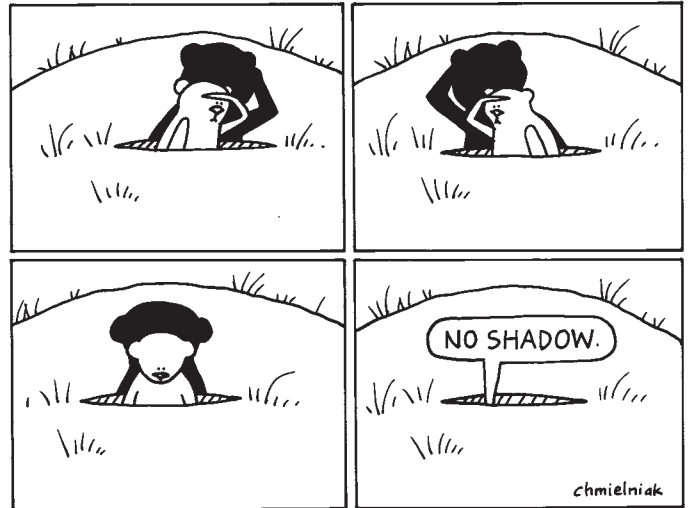
2/20/11

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit www.MissouriConservation.org/8707 or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to www.wildlifelicense.com/mo/.



Spring turkey season is April 18 through May 8



Groundhog incompetence

Contributors

BILL ALTMAN recently retired from the Department of Conservation after a career that began in September 1979. He has served in many positions, most recently forestry field program supervisor for wildland fire management. He lives in Sullivan and enjoys a wide variety of outdoor activities, especially deer and elk hunting.



DENNIS FIGG is a conservation biologist for the Conservation Department. He works to understand and conserve wildlife diversity. From bats to bugs, ferns to frogs, his conservation activities are for "all wildlife." Dennis writes frequently about insects, birds, bats and other wildlife that are not familiar to many people.

PAUL HAGEY, who lived in the Missouri Ozarks for a year after receiving his M.A. in journalism from the University of Missouri, is a natural history writer. He has a passion for illustrating the interconnectedness of life via the natural world in the articles he writes, and he looks forward to managing his own land someday.



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WHAT IS IT?

Mink tracks

On the back cover are mink tracks and right is a mink by Noppadol Paothong. Minks need permanent water and prefer woods nearby. Mostly nocturnal, they don't hibernate in winter and aren't social except when the young are being raised. Breeding begins in late February and lasts until early April. Minks prey on small animals, helping to keep those populations in check, while becoming prey themselves to other predators from great horned owls to coyotes. To learn more, visit www.mdc.mo.gov/node/2923.



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Shawn Cunningham

WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on the inside of this back cover.



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